



Bridging the Digital Gap

Service Heatmap

Moira Shire Council



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1. Report Overview

1.1 Report Background

This Service Heatmap report is one of three reports which will be delivered as part of the 'Bridging the Gap' project conducted by Logicalis for Moira Shire Council. The Bridging the Gap project has been undertaken to establish the current gaps in digital connectivity within Moira Shire with a view of further supporting its existing businesses to evolve within the region, as well as ensuring that connectivity is available to support future business opportunities within the shire. This second report will encompass the current service availability heatmaps from various vendors as well as any proposed future infrastructure and requirements to further support businesses in the shire. The initial report was a community consultation report, and the final report will provide a gaps analysis and guidance in PowerPoint form to provide next steps and a direction for the council in further supporting its businesses through digital connectivity.

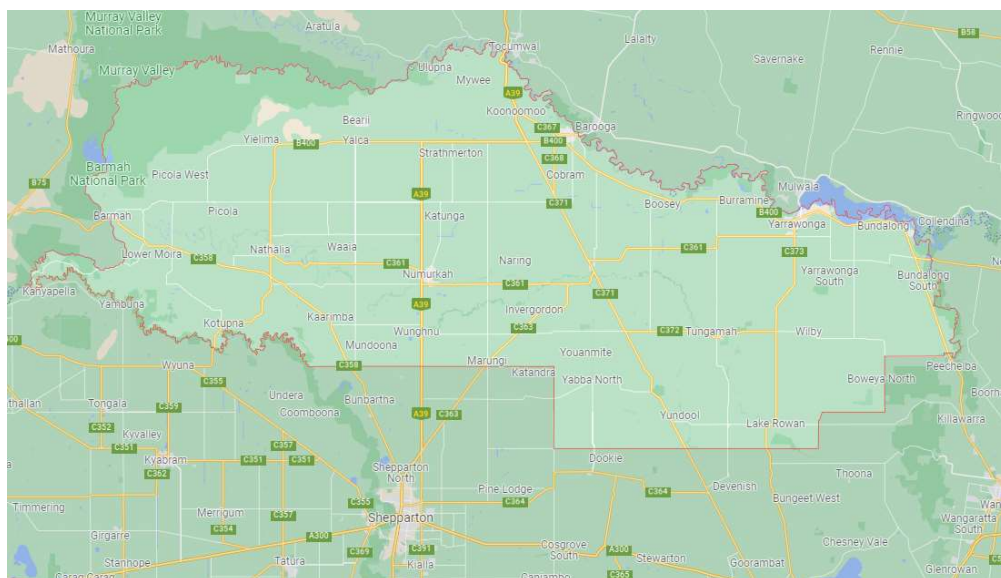
1.2 Report Purpose

The purpose of this report is to provide a visual representation of the current business grade internet services available within Moira shire. This report will provide information as to the areas requiring improvement of services and coupled with the community consultation will provide clear direction for the final report and recommendations.

1.3 Report Structure

This report has been structured to provide details on each technology type as well as the services available by the 3 most significant infrastructure providers in the region being NBN, Telstra and Optus. Multiple additional vendors have been contacted; however, their infrastructure presence is minimal and would have little to no impact on the outcomes of this report.

1.4 Moira Shire



2. Business Internet Service Types Overview

There are multiple technologies available to deliver internet services to businesses within the region. This section provides a high-level summary of these technologies.

NBN is by far the most used technology type and largest infrastructure provider in the region and it's also the most widely available internet type. The NBN — National Broadband Network — is an Australian-wide internet infrastructure built by NBN Co. NBN Co then sells wholesale access to the NBN to ISPs, which then sell NBN plans to customers.

You can't buy an NBN plan directly through NBN Co and if you want access to the NBN, you'll need to go through an internet provider who handles the setup of your plan. If you are being connected for the first time, your ISP will organise the NBN technician to come to your home.

There are multiple types of NBN connections available including:

- Fibre to the Premises (FTTP)
 - A Fibre-to-the-Premises connection involves fibre optic cables being responsible for data transfer at every point through the nbn™ network. The fibre cable is connected directly to a utility box on the outside of a premises, which in turn is connected to an nbn™ connection box inside the same premises.
- Fibre to the Node (FTTN)
 - All types of nbn™ broadband access network connections that utilise a physical line running to the premises are considered Fixed Line connections. An nbn™ Fibre to the Node (FTTN) connection is utilised where the existing copper phone and internet network from a nearby fibre node is used to make the final part of the connection to the nbn™ access network.
- Fibre to the Building (FTTB)
 - FTTB stands for Fibre to the Basement (or Fibre to the Building) and is used to connect apartment blocks and other large buildings, known as a Multi-Dwelling Unit (MDU), to the nbn.
- Fibre to the Curb (FTTC)
 - nbn™ Fibre to the Curb (FTTC) connection is used in circumstances where fibre is extended close to your premises, connecting to a small Distribution Point Unit (DPU), generally located inside a pit on the street. From here, the existing copper network is connected to the fibre to form the final nbn™ connection.
- Hybrid Fibre Coaxial (HFC)
 - An nbn™ Hybrid Fibre Coaxial (HFC) connection is used in circumstances where the existing 'pay TV' or cable network can be used to make the final part of the nbn™ network connection. In this circumstance an HFC line will be run from the nearest available fibre node to businesses premises.
- Fixed Wireless
 - An nbn™ Fixed Wireless connection utilises data transmitted over radio signals to connect a premises to the nbn™ network. This connection is typically used in circumstances where the distance between premises can be many kilometres. Data travels from a transmission tower

located as far as 14 kilometres, to an nbn™ outdoor antenna that has been fitted to the premises by an approved nbn™ installer. Fixed wireless also includes Microwave internet as a technology type as the mechanism for deliver is similar in that it required an outdoor antenna to be fitted to the premises.

- Satellite or Skymuster
 - Skymuster is the name for the NBN's satellite internet service, which is designed for regional and remote parts of Australia to deliver internet access. It relies on an antenna or dish on the building to receive and send data to a satellite, with the satellite transmitting information to the ground station dishes. Skymuster is the same as Elon Musk's new network, Starlink.

2.1 ADSL Summary

While most homes previously used ADSL to deliver internet, the ADSL network is mostly being replaced by NBN and will eventually be obsolete. ADSL connections used existing copper phone lines to connect your home to the internet, and speeds could greatly vary. This makes it more unreliable for heavy internet usage like video streaming, when compared to NBN and other connections. The networks that delivered ADSL to homes were built by ISPs and sometimes sold to other ISPs wholesale, while the NBN has created a more even playing field where no one internet provider controls the network.

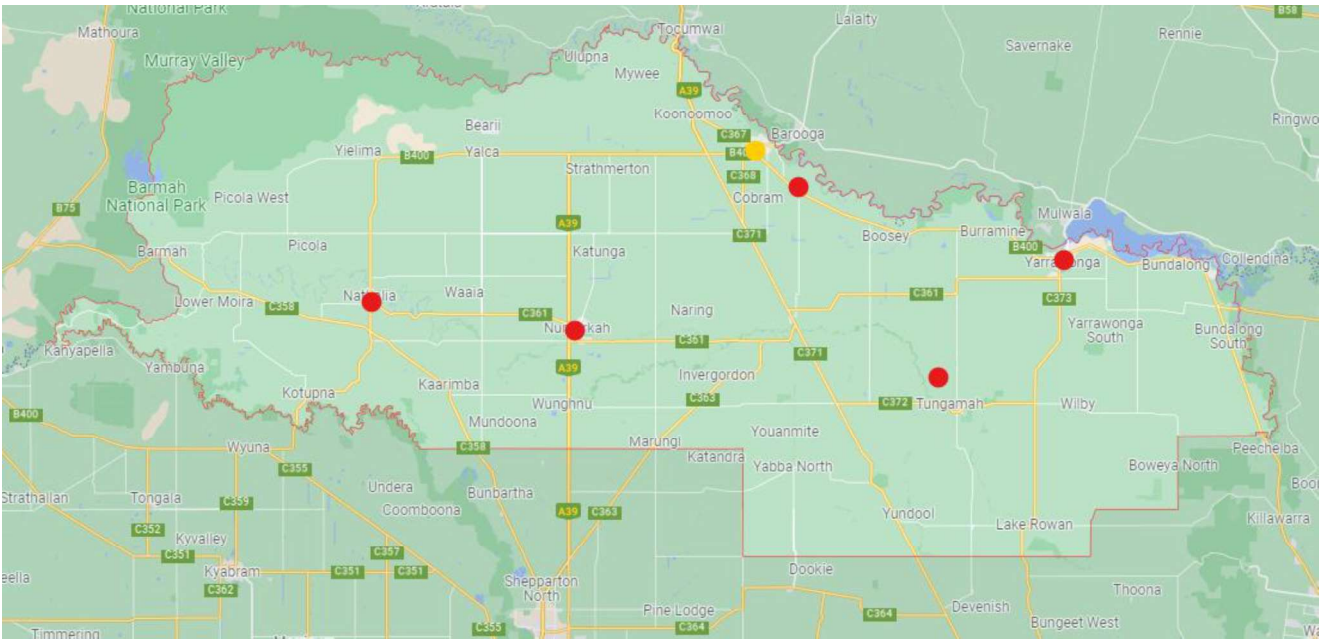
2.2 Mobile Broadband

Mobile broadband is quite like home wireless broadband, in that it requires a mobile network to deliver internet to a modem. However, while home wireless is designed as an in-home alternative to fixed connections, mobile broadband is a more portable offering. Mobile broadband is often best for supplementing home internet or for taking with you when you're out and about, such as holidays or travel for work, and need a more reliable internet connection than using your phone and hotspotting. Because of the portable nature of mobile broadband, you often don't get much data with these plans and the coverage within Moira Shire is patchy depending on location.

3. Current Council Infrastructure

3.1 Towers Available and Being Consumed by Vendors

- Space on towers are leased to either NBN, Telstra or Optus.
- Orange Below – Cobram Tower is currently at Capacity
- All other (red) Towers have capacity



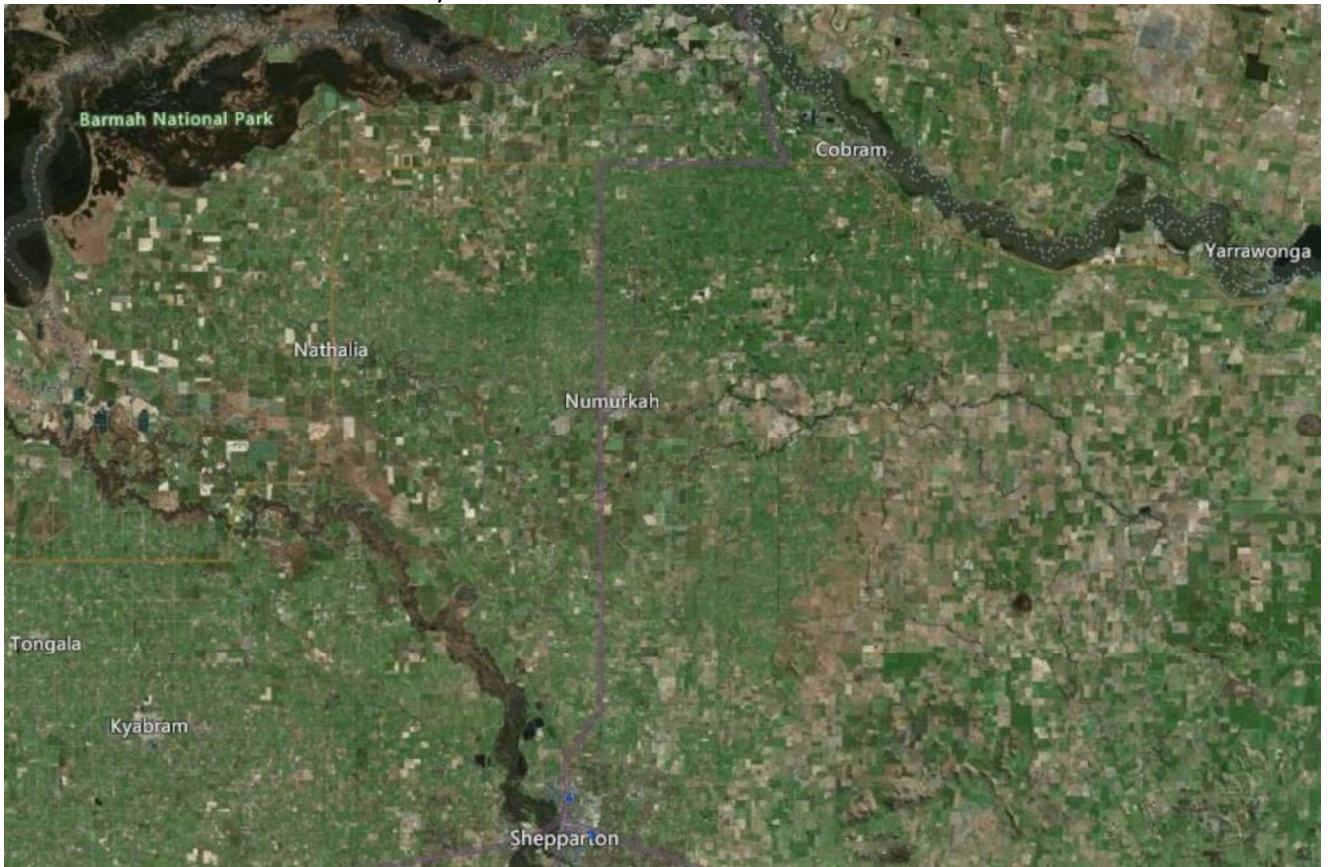
4. NBN Service Heatmap

4.1 Fixed Wireless



4.2 Fibre to the Basement (FTTB)

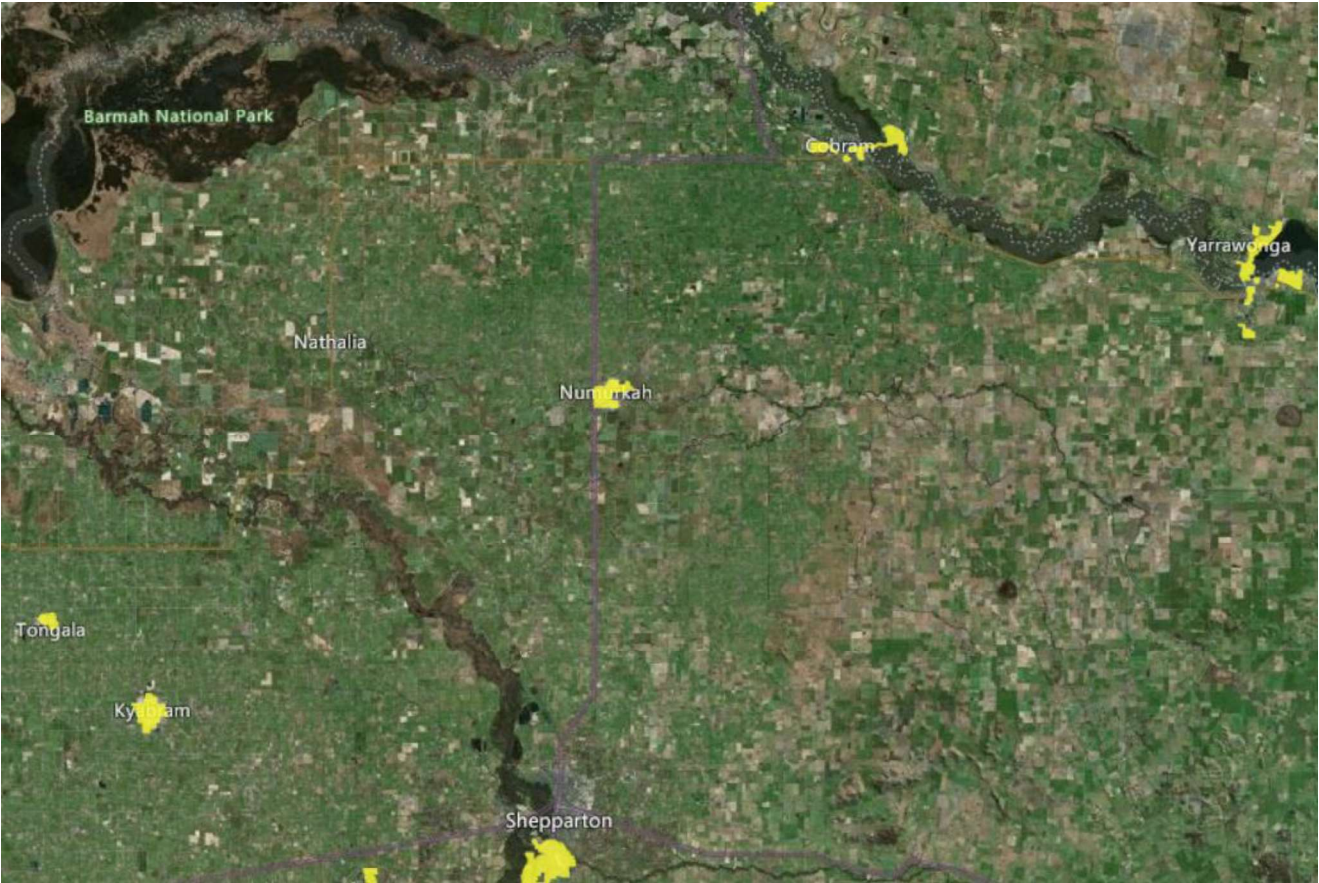
Not available in Moira shire currently.



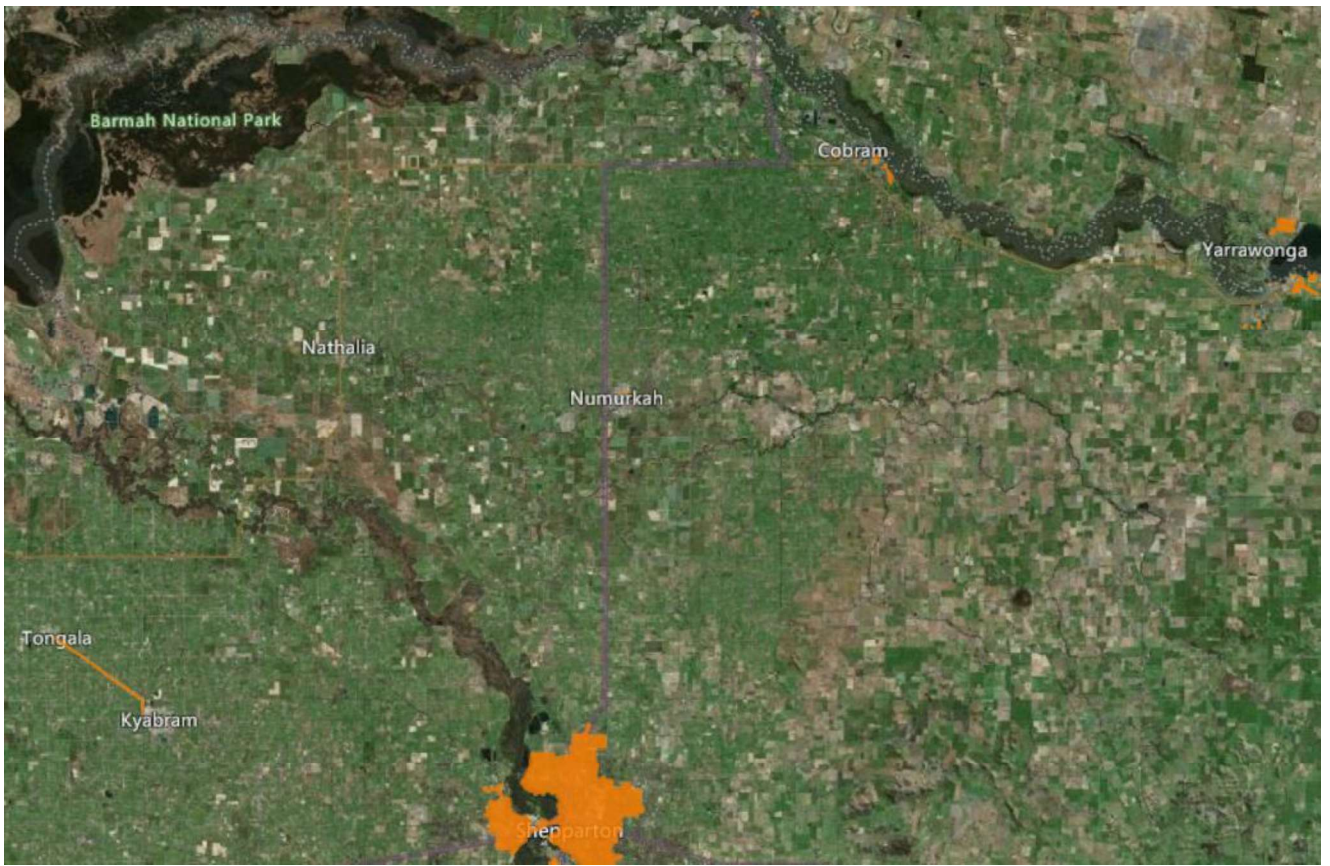
4.3 Fibre to the Curb (FTTC)



4,4 Fibre to the Node (FTTN)

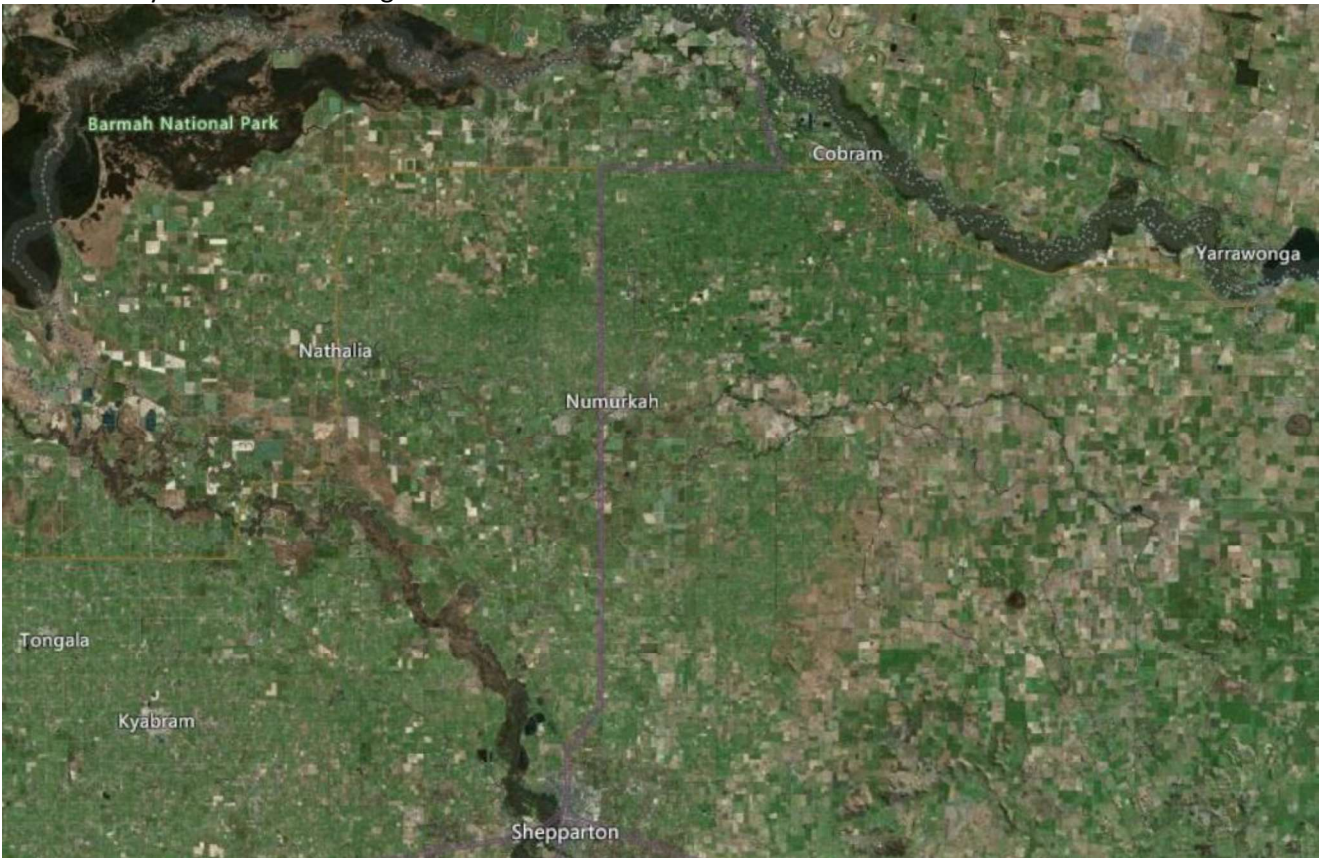


4.5 Fibre to the Premises



4.6 Hybrid Fibre Coaxial

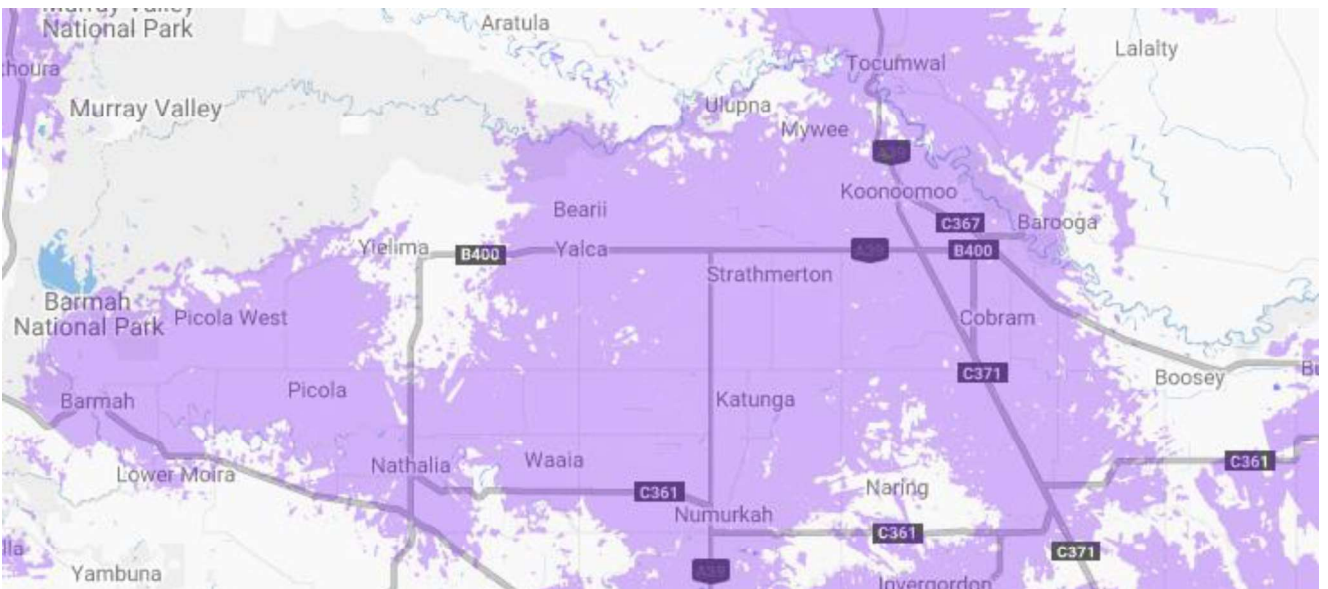
Not currently available in the region.



4.7 NBN Satellite – Skymuster

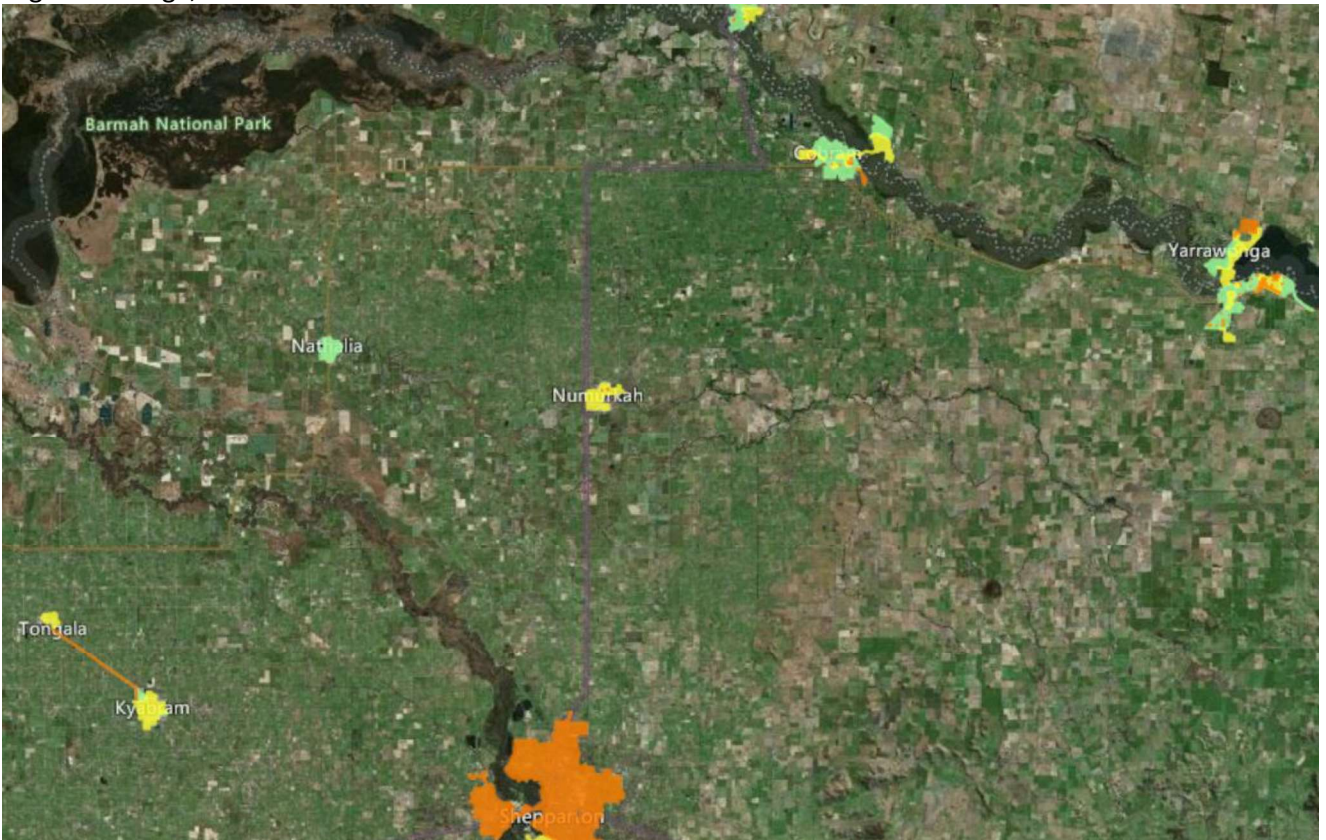


4.8 NBN Satellite – SkyMesh

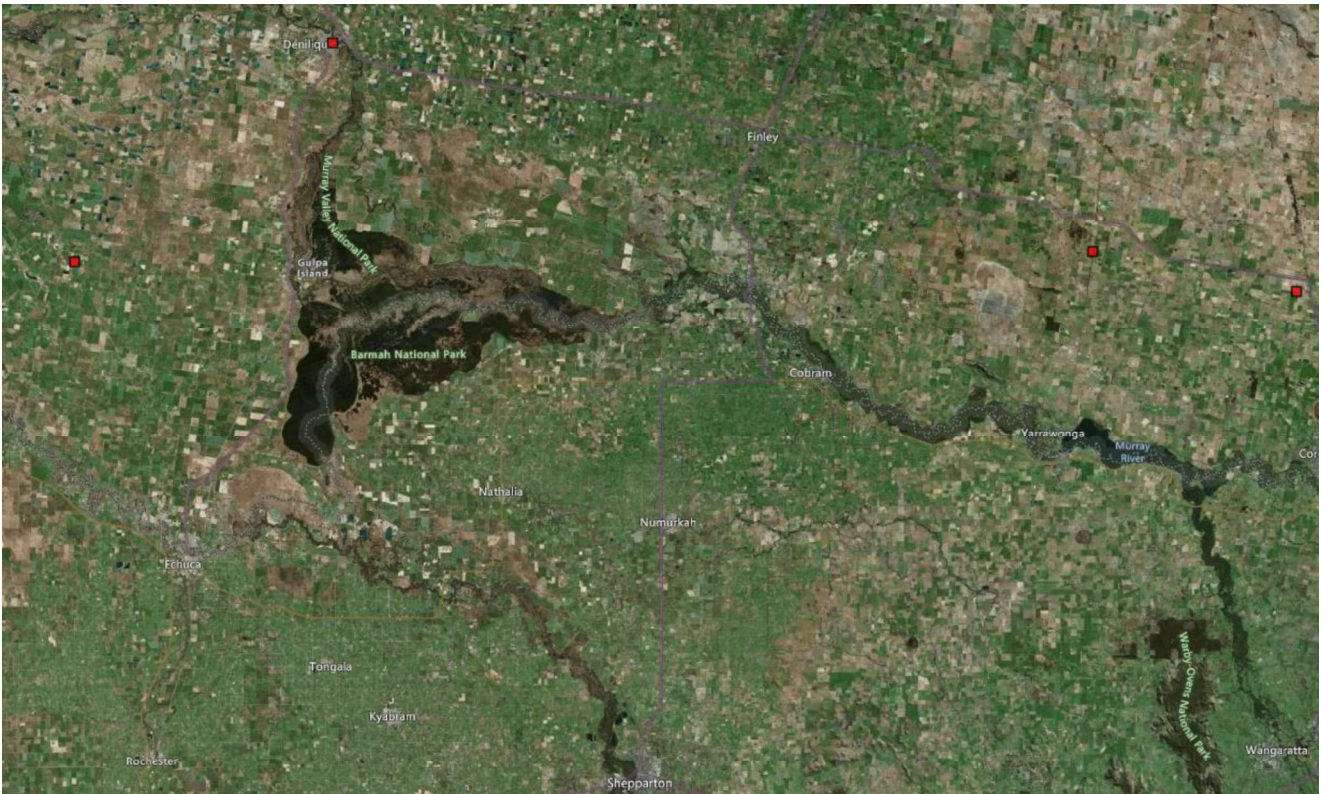


4.9 FTTP, FTTN, FTTC Consolidated

Legend: Orange, FTTP – Yellow FTTN – Green FTTC



4.10 Mobile Black Spot Program – Round 1 – NBN Funded Base Stations



4.11 Mobile Black Spot Program – Round 2 – NBN Funded Base Stations

Not Available in Moira Shire

4.12 Mobile Black Spot Program – Round 3 – NBN Funded Base Stations

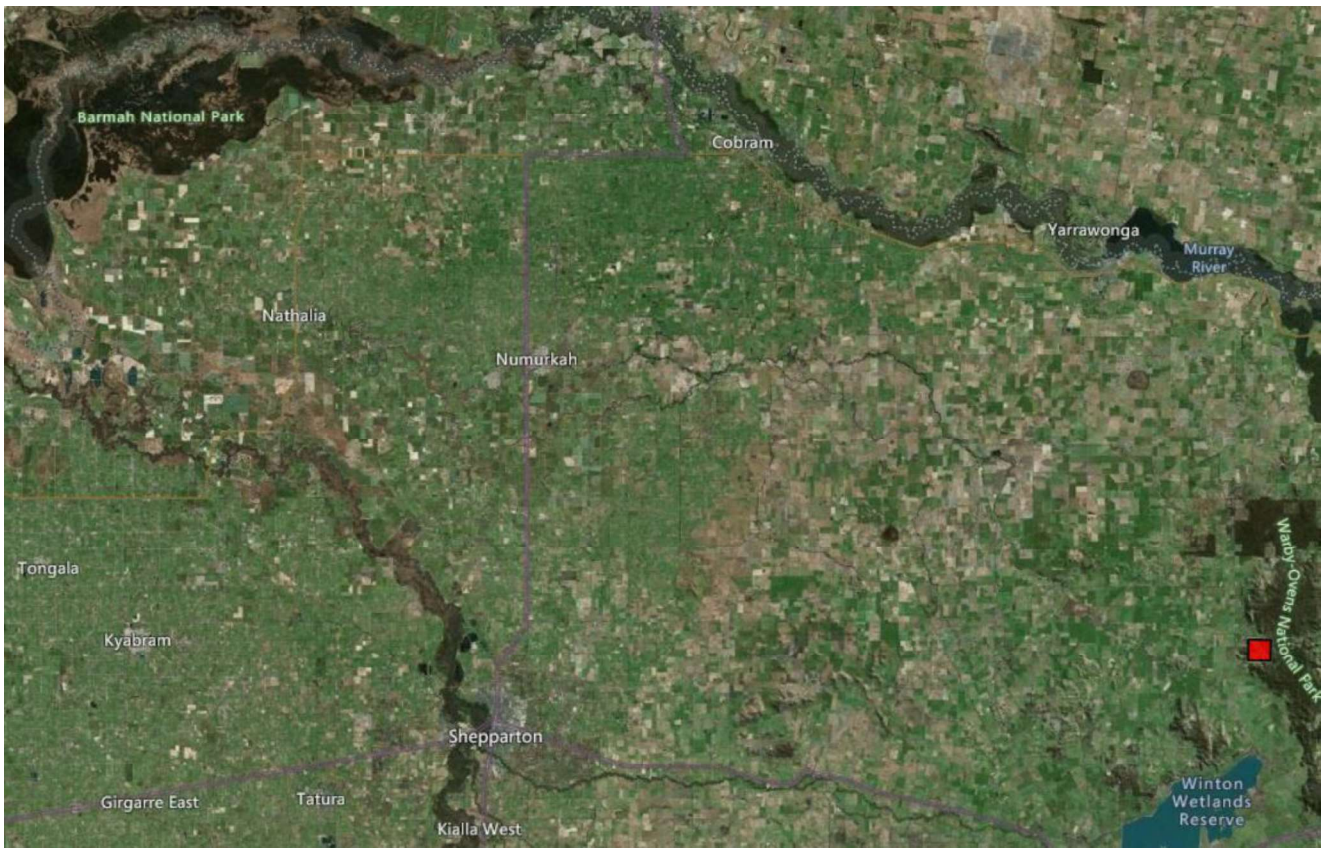
Macro-cell Base Station



4.13 Mobile Black Spot Program – Round 4 – NBN Funded Base Stations

Not available in Moira Shire.

4,14 Mobile Black Spot Program – Round 5 – NBN Funded Base Stations



4,15 Mobile Black Spot Program – Round 5A – NBN Funded Base Stations

Unavailable in Moira Shire.

5. Telstra Service Heatmap

5.1 5G Telstra Opportunities for Improved Services

Telstra's regional investments in the Moira Shire include our 5G upgrades in Yarrawonga, as well as a continuing program of work to provide more capacity via 4G and with 5G enhancements.

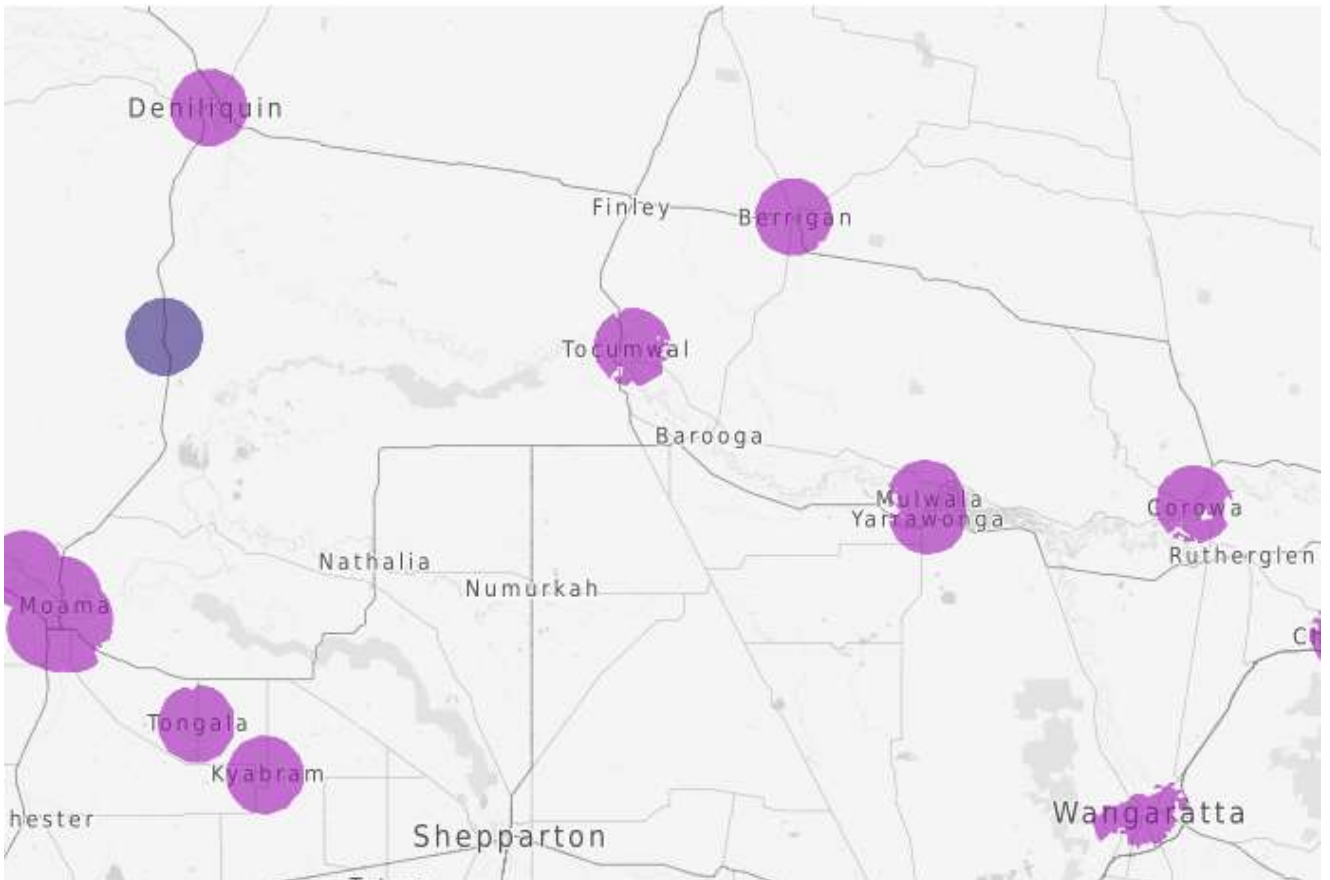
The Federal and State government Mobiles Blackspot Programs (MBSP) have been instrumental in enabling Telstra to provide coverage to communities across Victoria including Katandra in the Moira Shire.

The MBSP has been an important driver for greater mobile coverage in regional and rural areas that are not economic for mobile network operators to invest in alone. Telstra has already contributed over \$293 million to the MBSP (as part of over \$863 million in total investment), making us the largest industry contributor by far.

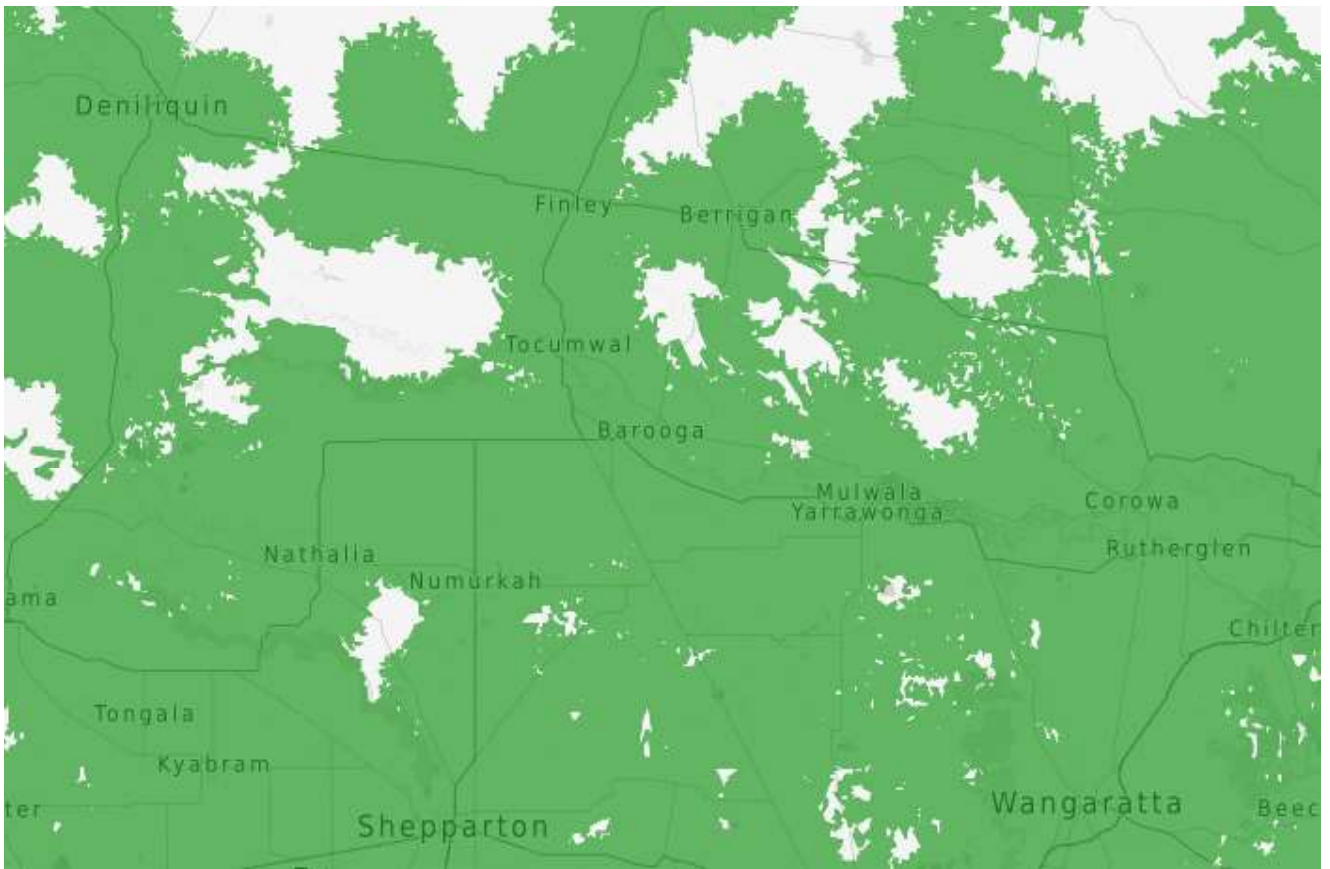
Telstra continue to look at opportunities under the Federal Mobile Black Spot Program and we welcome the announcement of Round 6 (\$80 million) of the program as well as Federal Government's Regional Connectivity Program with Round 2 recently being announced.

Telstra's ongoing commitment to our establishment of a of Co-Investment Fund over the next 4 years with a \$200M investment to partner with governments, local council, and businesses in addition to \$150M over the next 12 months to enhance networks in regional, rural, and remote Australia.

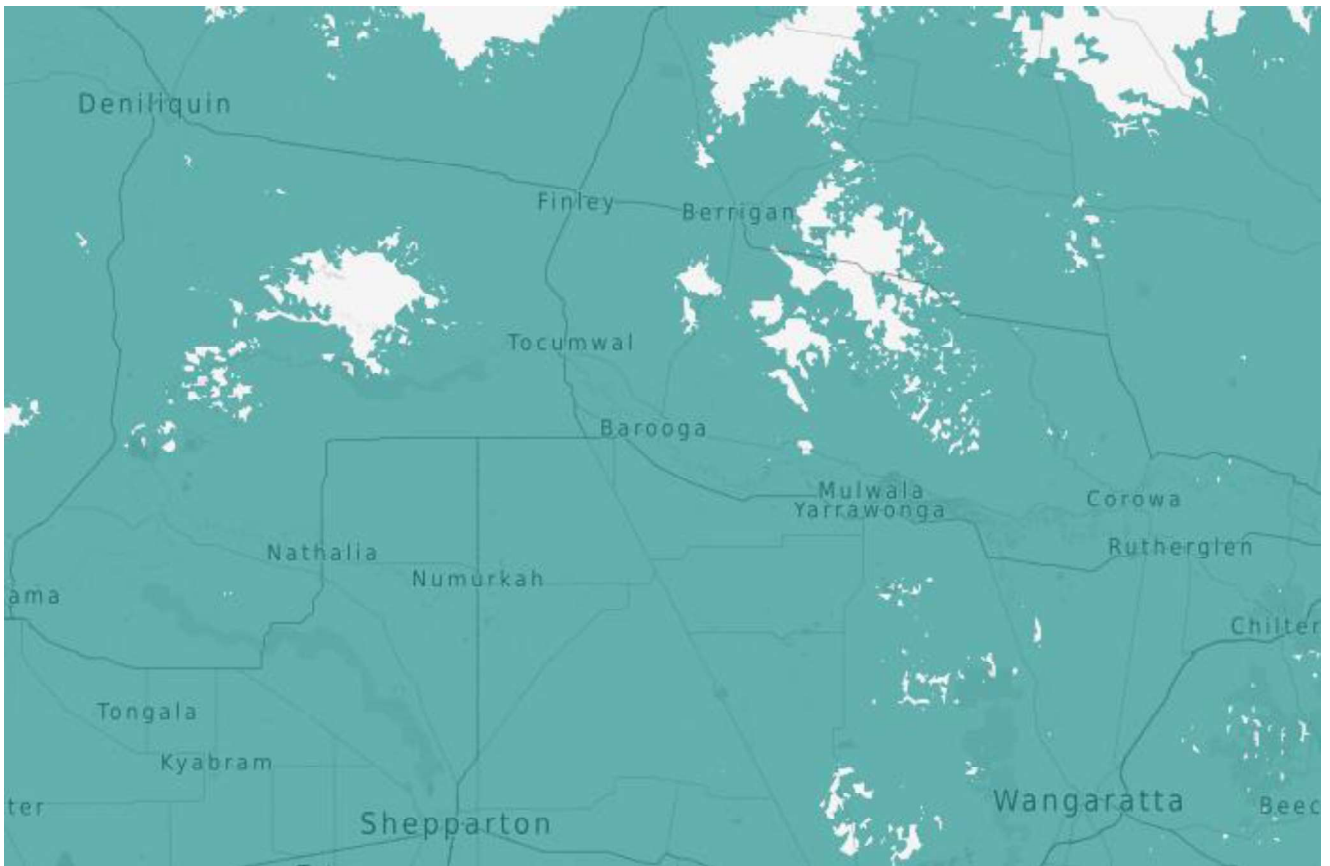
5.2 5G Connectivity



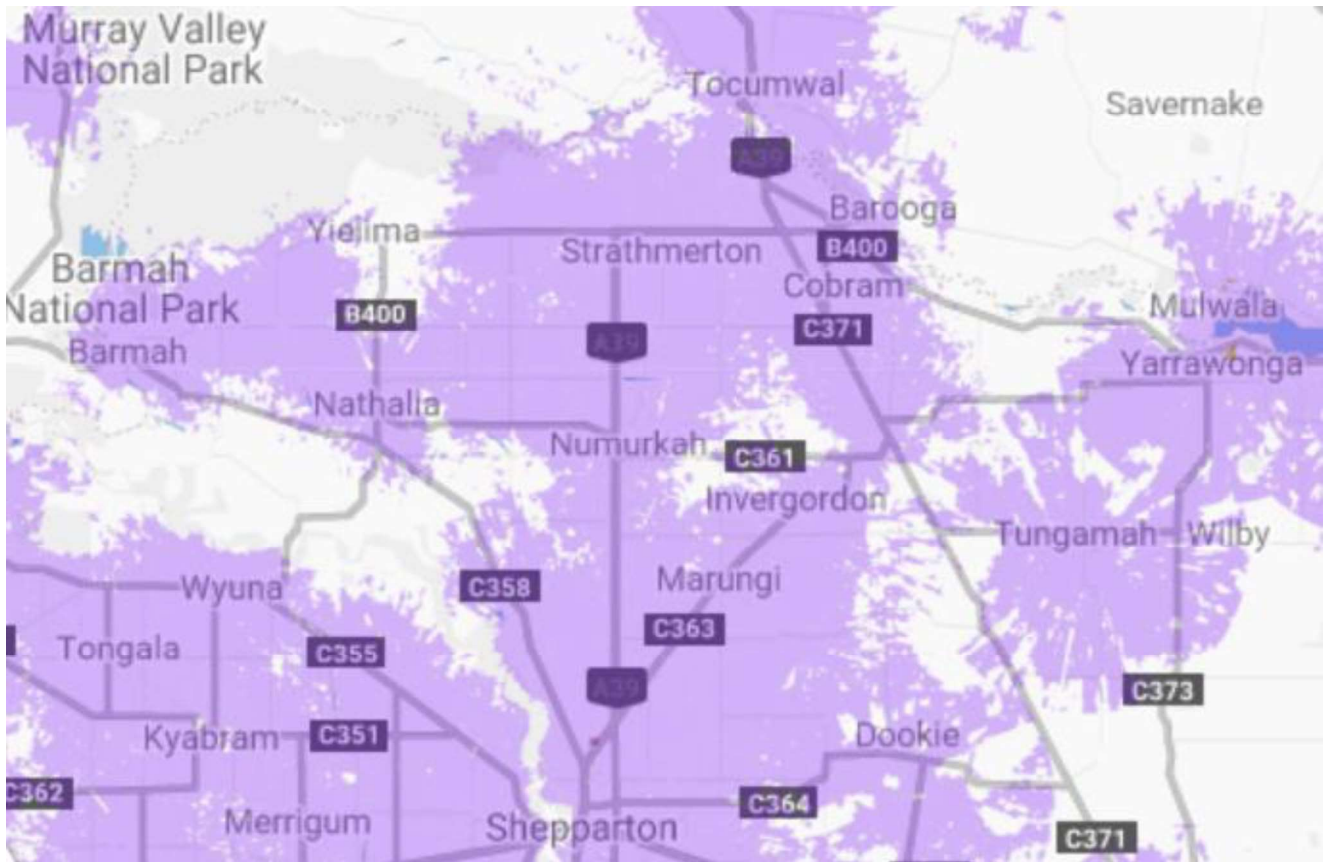
5.3 4G Connectivity



5.4 3G Connectivity



5.5 Telstra Business Grade NBN Services



5.6 Telstra IOT Network – LTE-M (up to 1MBPS)



5.7 Telstra IOT Network – LTE-M (up to 200KBPS)



6. Optus Service Heatmap

6.1 Optus Points of Presence

SITE_NAME	NE_SUBTYPE	NE_STATUS	Gda_94_Lat	Gda_94_Long
ALMONDS	Macrocell	In Service	-36.1875	145.9681
Arcadia Downs	Macrocell	In Service	-36.446	145.365
Ardmona	Macrocell	In Service	-36.3614	145.2761
Baddaginnie	Macrocell	In Service	-36.5744	145.9313
BARKLY ST WAHGUNYAH	Macrocell	In Service	-36.0105	146.4044
Barmah	Macrocell	In Service	-36.0184	144.9704
Barnawartha Township	Macrocell	In Service	-36.091	146.6743
Barooga	Macrocell	In Service	-35.9028	145.6904
Beechworth	Macrocell	In Service	-36.3569	146.7137
Benalla	Macrocell	In Service	-36.5351	145.9866
Benalla Central	Macrocell	In Service	-36.556	145.978
Benalla North	Macrocell	In Service	-36.5076	145.9755
Benalla Showground	Macrocell	In Service	-36.5663	145.9589
Benalla South	Macrocell	In Service	-36.6374	145.9673
BOWSER	Macrocell	In Service	-36.2957	146.3791
Brookfield-Hill_N_of_Town	Macrocell	In Service	-36.4696	146.572
Brown Brothers - Milawa	Macrocell	In Service	-36.4527	146.4286
Bundalong	Macrocell	In Service	-36.0363	146.1621
Chiltern	Macrocell	In Service	-36.1471	146.6144
Cobram	Macrocell	In Service	-35.9218	145.6463
Corowa	Macrocell	In Service	-35.9969	146.3907
Dhurringile	Macrocell	In Service	-36.4978	145.1974
Echuca	Macrocell	In Service	-36.1254	144.7537
Echuca Airport South	Macrocell	In Service	-36.1991	144.78
Echuca East	Macrocell	In Service	-36.131	144.769
Echuca South	Macrocell	In Service	-36.1416	144.7603
Elmore Central	Macrocell	In Service	-36.4911	144.634
Finley	Macrocell	In Service	-35.6238	145.6617
GIRGARRE	Macrocell	In Service	-36.4008	144.9781
Glenrowan	Macrocell	In Service	-36.4816	146.2168
HowLong	Macrocell	In Service	-35.9796	146.6405

Kanyapella Station	Macrocell	In Service	-36.1645	144.7877
KATAMATITE	Macrocell	In Service	-36.0828	145.6834
Katandra West	Macrocell	In Service	-36.23	145.5603
Kialla	Macrocell	In Service	-36.4489	145.3909
Kialla East	Macrocell	In Service	-36.4222	145.4308
Kialla West	Macrocell	In Service	-36.5272	145.3722
King Valley	Macrocell	In Service	-36.6727	146.4334
Koyuga	Macrocell	In Service	-36.2403	144.8861
Kyabram	Macrocell	In Service	-36.3066	145.0384
Kyabram South	Macrocell	In Service	-36.3433	145.0555
Lancaster	Macrocell	In Service	-36.316	145.0967
Lockington	Macrocell	In Service	-36.2677	144.5292
Mallan	Macrocell	In Service	-35.1049	143.6879
Mathoura	Macrocell	In Service	-35.8147	144.88
Merrigum	Macrocell	In Service	-36.3676	145.1267
Moama Murray	Macrocell	In Service	-36.1032	144.7533
Mooroopna	Macrocell	In Service	-36.3945	145.3603
Mooroopna North	Macrocell	In Service	-36.3744	145.3477
Moulamein	Macrocell	In Service	-35.0884	144.0351
Mt Big Ben - Vodafone	Macrocell	In Service	-36.4037	146.9395
Mt Burramboot	Macrocell	In Service	-36.516	144.7612
Mt Major Repl	Macrocell	In Service	-36.3581	145.6951
Mt Taminik	Macrocell	In Service	-36.4156	146.2146
Mulwala	Macrocell	In Service	-35.9765	146.0055
Murchison Central	Macrocell	In Service	-36.6121	145.2071
Murchison East-town	Macrocell	In Service	-36.6171	145.2671
Nanneella	Macrocell	In Service	-36.358	144.7955
Nathalia	Macrocell	In Service	-36.0604	145.2046
Numurkah	Macrocell	In Service	-36.0921	145.4433
Oaklands	Macrocell	In Service	-35.5624	146.1612
Patho	Macrocell	In Service	-36.0114	144.4471
Rivalea Niemur	Macrocell	In Service	-35.2279	144.3944
RIVALEA REDLANDS	Macrocell	In Service	-35.9399	146.3397
RIVERINA HIGHWAY	Macrocell	In Service	-35.8174	146.3377

Rochester	Macrocell	In Service	-36.3619	144.6989
Rushworth	Macrocell	In Service	-36.5816	145.0224
Rutherglen	Macrocell	In Service	-36.0763	146.4489
SAVERNAKE	Macrocell	In Service	-35.7735	146.0463
Shepparton	Macrocell	In Service	-36.3821	145.4186
Shepparton East	Macrocell	In Service	-36.4198	145.527
Shepparton Lookout	Macrocell	In Service	-36.3804	145.4003
Shepparton North	Macrocell	In Service	-36.3491	145.3799
Shepparton North East	Macrocell	In Service	-36.3642	145.425
Shepparton South	Macrocell	In Service	-36.3989	145.3971
Shepparton South East	Macrocell	In Service	-36.3731	145.4625
Springhurst	Macrocell	In Service	-36.1898	146.4967
St Germain's	Macrocell	In Service	-36.2553	145.211
Stanhope	Macrocell	In Service	-36.4403	145.0399
Strathmerton	Macrocell	In Service	-35.9149	145.4333
Swanpool	Macrocell	In Service	-36.7919	146.0095
Tallygaroopna	Macrocell	In Service	-36.2367	145.426
Tangambalanga	Macrocell	In Service	-36.2163	147.0328
Tatura	Macrocell	In Service	-36.4494	145.2243
Tocumwal	Macrocell	In Service	-35.7953	145.554
Tongala	Macrocell	In Service	-36.2544	144.9456
Toolamba	Macrocell	In Service	-36.495	145.3223
TOOLLEEN	Macrocell	In Service	-36.7232	144.6772
Urana	Macrocell	In Service	-35.3307	146.2901
Wakool	Macrocell	In Service	-35.4674	144.3897
Waldara	Macrocell	In Service	-36.3415	146.2772
Wangaratta	Macrocell	In Service	-36.3513	146.3321
Wangaratta Central	Macrocell	In Service	-36.354	146.3184
Wangaratta East	Macrocell	In Service	-36.3845	146.3672
Wangaratta Nth West	Macrocell	In Service	-36.3256	146.3006
Wangaratta South	Macrocell	In Service	-36.3747	146.33
Wangaratta West	Macrocell	In Service	-36.3632	146.3002
WARBY RANGES	Macrocell	In Service	-36.2962	146.2649
WHARPARILLA	Macrocell	In Service	-36.1298	144.6331

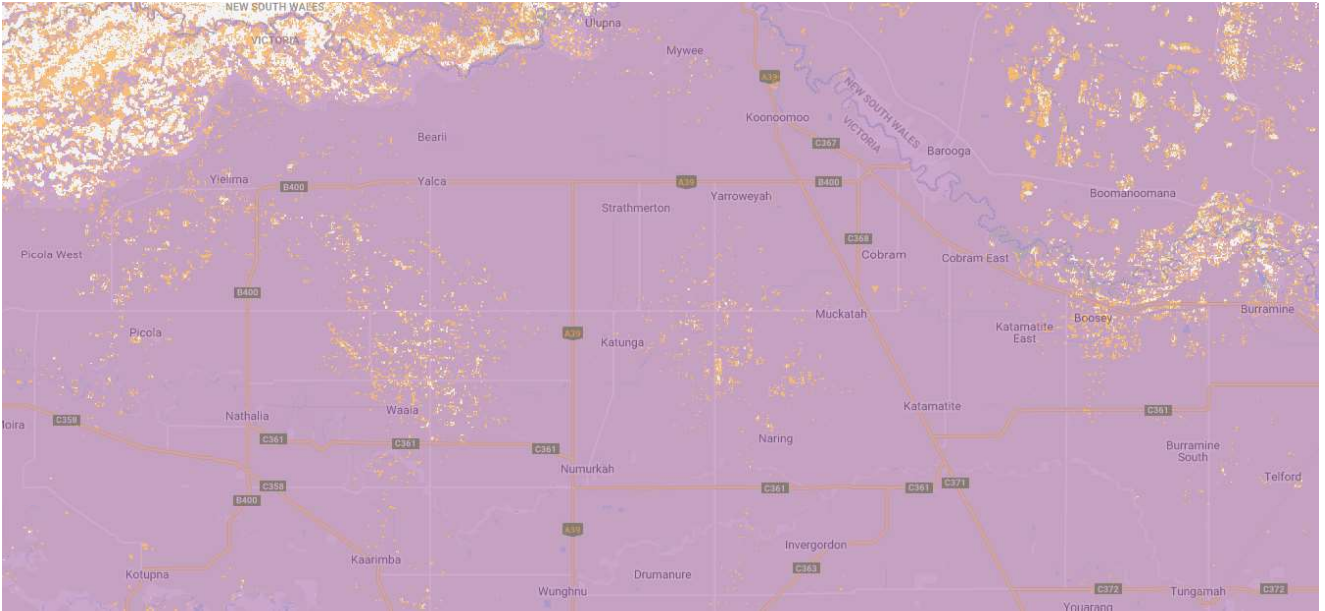
6.2 3g Connectivity



Legend

- 3G Outdoors
- 3G Outdoors with Antenna

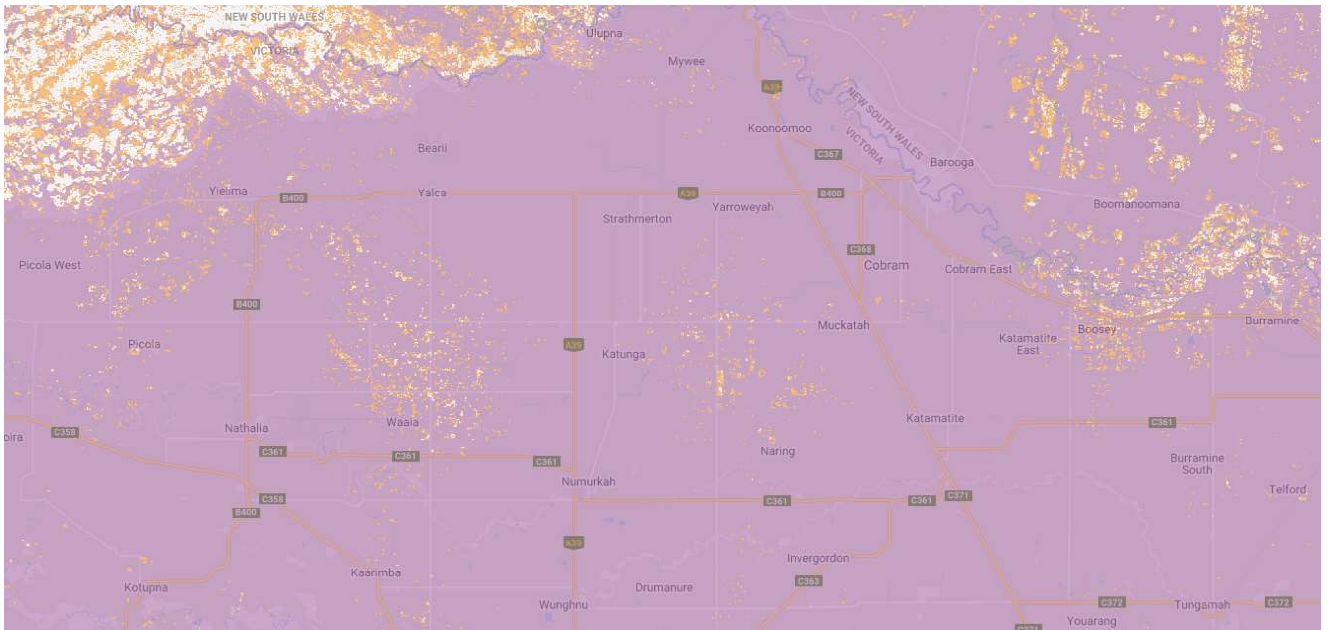
6.3 4G Connectivity



Legend

- 4G Outdoors
- 4G Outdoors with Antenna

6.4 5G connectivity



Legend

- 5G Max Outdoors
- 5G Outdoors
- 4G Outdoors
- 4G Outdoors with Antenna